

# Clinical trials of autologous bone marrow stem cells

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## 1 acute myocardial infarction

| Trial   | Treatments  | Patients  | Trials design and methods |
|---|---|---|---------------------------|
| <b>autologous bone marrow stem cells vs control</b>                     |   |   |                           |
| <a href="#">ASTAMi (Lunde) , 2006</a><br>n=50/50<br>follow-up: 6 months | intracoronary injection of autologous mononuclear BMC (stem cells $0.68 \cdot 10^8$ )<br><i>versus</i><br><i>control(Heparanizedplasma)</i>                                       | patients with acute ST-elevation myocardial infarction of the anterior wall treated with percutaneous coronary intervention                       | parallel group<br>open    |
| <a href="#">BOOSt (Meyer) , 2004</a><br>n=30/30<br>follow-up: 6 months  | stem cells mean $2.46 \cdot 10^9$<br><i>versus</i><br><i>control(Heparanisedplasma)</i>   | successful percutaneous coronary intervention (PCI) for acute ST-segment elevation myocardial infarction  | parallel group<br>open    |
| <a href="#">Chen , 2004</a><br>n=NA<br>follow-up: 6 months              | -   | -   |                           |
| <a href="#">Huang , 2006</a><br>n=20/20<br>follow-up: 6 months          | intracoronary transplantation of autologous BM-MNC via a micro-catheter right after PCI (stem cells mean $1.8 \cdot 10^8$ )<br><i>versus</i><br><i>placebo(Heparanisedsaline)</i> | patients with first onset of acute inferior-wall myocardial infarction aged $<or = 75$ , treated with emergent percutaneous coronary intervention | parallel group<br>open    |
| <a href="#">Karpov , 2005</a><br>n=10/10<br>follow-up: 6 months         | intracoronary injection of bone marrow mononuclear cells (stem cells mean $88.5 \cdot 10^6$ )<br><i>versus</i><br><i>control</i>  | patients with acute myocardial infarction.  | parallel group<br>NA      |
| <a href="#">Li , 2007</a><br>n=35/23<br>follow-up: 6 months             | autologous peripheral blood stem cell transplantation by intracoronary infusion (stem cells mean $7.25 \cdot 10^7$ )<br><i>versus</i><br><i>control</i>                           | patients with AMI   | parallel group<br>open    |
| <a href="#">MAGIC (cell infusion) , 2004</a><br>n=10/7<br>follow-up:    | intracoronary infusion of collected peripheral blood stem-cells<br><i>versus</i><br><i>control</i>  | patients with myocardial infarction who underwent coronary stenting for the culprit lesion of infarction  |                           |

continued...

| <b>Trial</b>   | <b>Treatments</b>  | <b>Patients</b>   | <b>Trials design and methods</b> |
|--|--|---|----------------------------------|
| MAGIC Cell-3-DES (Kang) , 2006<br>n=25/25<br>follow-up: 6 months | intracoronary infusion of mobilized peripheral blood stem cells by granulocyte colony-stimulating factor (stem cells $1-2 \cdot 10^9$ )<br><i>versus</i><br><i>control</i> | patients with myocardial infarction who underwent coronary revascularization with DES for the culprit lesion        | parallel group<br>open           |
| Meluzin HD , 2006<br>n=22/22<br>follow-up: 3 months              | intracoronary mononuclear bone marrow cells (stem cells $10^8$ )<br><i>versus</i><br><i>control</i> ( <i>Cellsuspensionmedia</i> )   | patients with a first acute myocardial infarction   | parallel group<br>open           |
| Meluzin LD , 2006<br>n=22/22<br>follow-up: 3 months              | intracoronary mononuclear bone marrow cells (stem cells $10^7$ )<br><i>versus</i><br><i>control</i> ( <i>Cellsuspensionmedia</i> )   | patients with a first acute myocardial infarction   | parallel group<br>open           |
| Penicka , 2007<br>n=14/10<br>follow-up: 4 months                 | Intracoronary injection of autologous bone marrow-derived mononuclear cells (stem cells $26.4 \cdot 10^8$ )<br><i>versus</i><br><i>control</i>                             | patients with large anterior acute myocardial infarction  | parallel group<br>open           |
| Ruan , 2005<br>n=9/11<br>follow-up: 6 months                     | intracoronary injection of bone-marrow cell (stem cells dose NA)<br><i>versus</i><br><i>control</i> (Diluted serum)  | with acute myocardial infarction and anterior descending coronary artery occlusion proven by angiography            | parallel group<br>open           |
| Suarez de Lezo (cell) , 2007<br>n=10/10<br>follow-up: 3 months   | intracoronary infusion of autologous mononuclear bone marrow cells ( $9 \cdot 10^8$ )<br><i>versus</i><br><i>control</i> ( <i>Salinecontaining0.1%heparin</i> )            | patients with revascularized anterior wall AMI and depressed left ventricular function (ejection fraction $<45\%$ ) | parallel group<br>open           |
| TCT-STAMI (Ge) , 2006<br>n=10/10<br>follow-up: 6 months          | emergent intracoronary autologous bone marrow cell transplantation ( $4 \cdot 10^7 SC$ )<br><i>versus</i><br><i>control</i>  | patients admitted within 24 h after the onset of a first AMI  | parallel group<br>NA             |
| <b>autologous bone marrow stem cells vs placebo</b>              |  |   |                                  |
| Janssens , 2006<br>n=33/34<br>follow-up: 4 months                | stem cells mean $1.7 \cdot 10^8$<br><i>versus</i><br><i>placebo</i> ( <i>Salineand5%autologousserum</i> )  | patientst with successful percutaneous coronary intervention for STEMI  | parallel group<br>double blind   |

continued...

| Trial   | Treatments   | Patients   | Trials design and methods       |
|---|--|--|---------------------------------|
| REPAIR-AMI (Schachinger) , 2006 [NCT00279175] n=95/92 follow-up: 4 months | intracoronary infusion of progenitor cells derived from bone marrow (stem cells mean $2.36 \cdot 10^8$ )<br><i>versus</i><br>placebo(X – vivomediaand20%autologousserum) | patients with acute myocardial infarction  | double blind                    |
| TIME ongoing n=NA follow-up:  | autologous bone marrow-derived mononuclear cells (BMMNCs)<br>versus<br>placebo   | patients with moderate-to-large anterior AMIs who have undergone successful percutaneous coronary intervention of the left anterior descending coronary artery and have a left ventricular (LV) ejection fraction $\leq 45\%$ by echocardiography. | Parallel groups<br>double blind |

More details and results :

- cell-based therapies for acute myocardial infarction in PCI at <http://www.trialresultscenter.org/go-Q313>

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ongoing trial

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